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TOY SPHERE WITH CARD ELEMENTS SLIDABLY DISPOSED TO A PERIPHERY THEREOF

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Abstract

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TOY SPHERE WITH CARD ELEMENTS SLIDABLY DISPOSED TO A PERIPHERY THEREOF

ABSTRACT OF THE DISCLOSURE

A toy sphere includes three circular members and each of which has an axis perpendicular with each other, the three circular members sharing a common center, each of the three circular members having a track defined in an outer periphery thereof and each of the tracks communicating with each other at intersections thereof, a plurality of tile elements each having a lower portion and an upper portion with a neck connected therebetween such that the lower portion and the neck of each of the tile elements are slidably received in the tracks.

TOY SPHERE WITH CARD ELEMENTS SLIDABLY DISPOSED TO A PERIPHERY THEREOF

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a toy sphere and more particularly, to a toy sphere with tile elements slidably disposed to a periphery thereof and a user may shift the tile elements disposed thereon to arrange the tile elements into a desired form.

2. Brief Description of the Prior Art

A good toy should have some characters which includes:

(1) The toy should be safe such that there is no possible harm for a user operating the toy.

(2) The toy should have a feature of stimulating the brainpower of the user.

(3) The toy is able to be operated in a variety of ways to operate it such that the user can concentrate his/her attention on the toy and enjoy the toy.

One of such typical toys is called "Rubik's Cube" or "magic cube" which is a cube and each one of six sides of the magic cube is divided into nine elements with the same color, every row and every column of the elements in each side can be respectively rotated about a vertical axis and a horizontal axis. Before operating the magic cube, all of the elements are arranged to be an irregular form, that is each one of six sides has more than two colors of elements, a user is then required to operate the magic cube to arrange the colors of the elements to be a certain form, such as to

arrange all the elements with the same color on the same side of the cube. The magic cube only provides the user the chance to rotate the elements, the user cannot shift the elements by sliding on any one of the six sides.

Another toy is a rectangular plate on which nine positions are defined, each one of the nine positions has the same size and there have eight tiles disposed to the plate. A user can shift one of the tiles to the remaining empty position and by this manner the eight can be re-arranged to be a certain pattern. This toy only provides the user a chance to slide the tiles.

The present invention intends to provide an improved toy which is a sphere with tile elements disposed thereto wherein the sphere is composed of three circular members and each of the circular members are perpendicular with each other. The tile elements can have their positions changed by moving along the three circular members so as to mitigate and/or obviate the above-mentioned problems.

SUMMARY OF THE INVENTION

The present invention provides a toy sphere which includes three circular members sharing the same center, each of the three circular members having an axis and the three axes being arranged to be perpendicular with each other. Each one of the three circular members has a track defined in an outer periphery thereof and the three tracks communicate with each other at intersections. A plurality of tile elements each have a lower portion and an upper portion, with a neck connecting the lower portion and the upper portion. The lower

arrange all the elements with the same color on the same side of the cube. The magic cube only provides the user the chance to rotate the elements, the user cannot shift the elements by sliding on any one of the six sides.

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The present invention intends to provide an improved toy which is a sphere with tile elements disposed thereto wherein the sphere is composed of three circular members and each of the circular members are perpendicular with each other. The tile elements can have their positions changed by moving along the three circular members so as to mitigate and/or obviate the above-mentioned problems.

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portion and the neck of each of the tile elements are slidably engaged with the tracks such that the tile elements can be shifted along the three tracks.

It is an object of the present invention to provide a toy sphere on which a plurality of tile elements are shifted along tracks defined in an outer periphery of the toy sphere.

It is another object of the present invention to provide a toy sphere on which tile elements can be shifted along a single, respective track or be shifted to other tracks.

Other objects, advantages, and novel features of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of a toy sphere in accordance with the present invention;

Fig. 2 is an exploded view of a first embodiment of the toy sphere in accordance with the present invention;

Fig. 3 is a side elevational view, partly in section, of a tile element received in a track;

Fig. 4 is a view similar to Fig. 3 to show another type of tile element received in a track, and

Fig. 5 is an exploded view of a second embodiment of the toy sphere in accordance with the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings and initially to Figs. 1 through 3, a toy sphere in accordance with the present

invention generally includes three circular members 1a , 2a and 3a which share the same center. Each of the three circular members 1a, 2a and 3a has an axis perpendicularly extending through a center of a plane where the respective circular member 1a/2a/3a is located and the three axes are arranged to be perpendicular with each other. Each one of the three circular members 1a, 2a and 3a has a track defined in an outer periphery thereof and the three tracks communicate with each other at intersections therebetween.

The toy sphere is composed by four one-fourth sphere portions 30, each one of the one-fourth sphere portions 30 including a part of each of the three circular members 1a, 2a, 3a. As seen in Fig. 2, the one-fourth sphere portion 30 includes a part 301 of the circular member 1a and a part 303 of the circular member 3a, each of the two parts 301/303 is a half circular section of the respective circular member 1a/3a. A part 302 of the circular member 2a is connected between a respective middle point of the two parts 301, 303 curved peripheries and each of the curved peripheries 301, 302, 303 having an upper layer 31 and a lower layer 32 and a perpendicular connecting portion 34 connected between the upper layer 31 and the lower layer 32. The lower layer 32 extends longer than the upper layer 31 such that any two opposite upper layers 32 define a track therebetween, such as positions where the numerals 322, 324 lead to. The lower layer 32 has studs 306 extending laterally therefrom and recesses 38 defined laterally therein such that the two adjacent one-fourth sphere portions 30 can be combined

together by mutually inserting the studs 36 into the recesses 38. Furthermore, each of the studs 36 has a flange 362 (see Fig. 3) extending radially from a periphery thereof so as to securely received in the respective recess 38, by means of an interference fit.

A plurality of tile elements 20 each have a lower portion 24 and an upper portion 22, a neck 26 connected between the lower portion 24 and the upper portion 22 such that the lower portion 24 and the neck 26 are slidably engaged with the tracks 322, 324. The upper portion 22 has a flat upper surface.

Accordingly, when a user (not shown) plays with the toy sphere, he/she is required to shift the tile elements 20 along the three tracks of the circular members 1a, 2a, 3a to arrange the tile elements 20 into a certain or required pattern. The tile elements 20 can be shifted along a certain track or be transferred to other tracks at the intersecting positions of two tracks such that the toy sphere has variety of ways in which the tile elements 20 thereof can be shifted and is suitable to be operated by children or adults.

Fig. 4 shows another embodiment of the tile element 20' wherein an upper surface of the tile element 20 is an arcuate surface.

Fig. 5 shows a second embodiment of the toy sphere wherein the toy sphere is composed eight one-eighth sphere portions 40, each of which is configured as a half of the one-fourth sphere portions 30 shown in Fig. 2 when divided from a central center of the track 324 of the part 302 of the

together by mutually inserting the studs 36 into the recesses 38. Furthermore, each of the studs 36 has a flange 362 (see Fig. 3) extending radially from a periphery thereof so as to securely received in the respective recess 38, by means of an interference fit.

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circular member 2a. Each of the one-eighth sphere portions 40 also has an upper layer 42 and a lower layer 43 and, a perpendicular connecting portion 401 is connected between the corresponding upper layer 42 and the lower layer 43 such that a track 44 is defined between the upper layer 42 and the lower layer 43. The lower layer 43 has a plurality of studs 46 extend laterally therefrom and recesses 48 defined laterally therein such that each of two one-eighth sphere portions 40 of the eight one-eighth sphere portions 40 can be combined together by receiving the studs 46 into the respective recesses 48 in the way described relating to Fig. 2. Also, the tile element 20" has a neck 26' with a square cross-section and the tile element 20 in Fig. 2 has a neck 26 with a round cross-section.

Although the invention has been explained in relation to its preferred embodiment, it is to be understood that many other possible modifications and variations can be made without departing from the spirit and scope of the invention as hereinafter claimed.

The embodiment of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A toy sphere comprising:

three circular members which share the same center, each of the three circular members having an axis and said three axes being arranged to be perpendicular with each other, each one of said three circular members having a track defined in an outer periphery thereof and said three tracks communicating with each other at intersections, and

a plurality of tile elements each having a lower portion and an upper portion, a neck connected between said lower portion and said upper portion, said lower portion and said neck being slidably received in said tracks.

2. The toy sphere as claimed in claim 1 wherein said sphere is composed by four one-fourth sphere portions, each of the one-fourth sphere portions having two semi-circular curved peripheries and a one-fourth circular curved periphery connected between said two semi-circular curved peripheries, each of said curved peripheries having an upper layer and a lower layer, said lower layer being longer than said upper layer, said lower layer having studs extending laterally therefrom and recesses defined laterally therein such that said two adjacent one-fourth sphere portions can be combined together by mutually inserting said studs into said recesses and said track is defined between by said two upper layers.

3. The toy sphere as set forth in claim 1 wherein each of said studs has a flange extending radially from a periphery thereof.

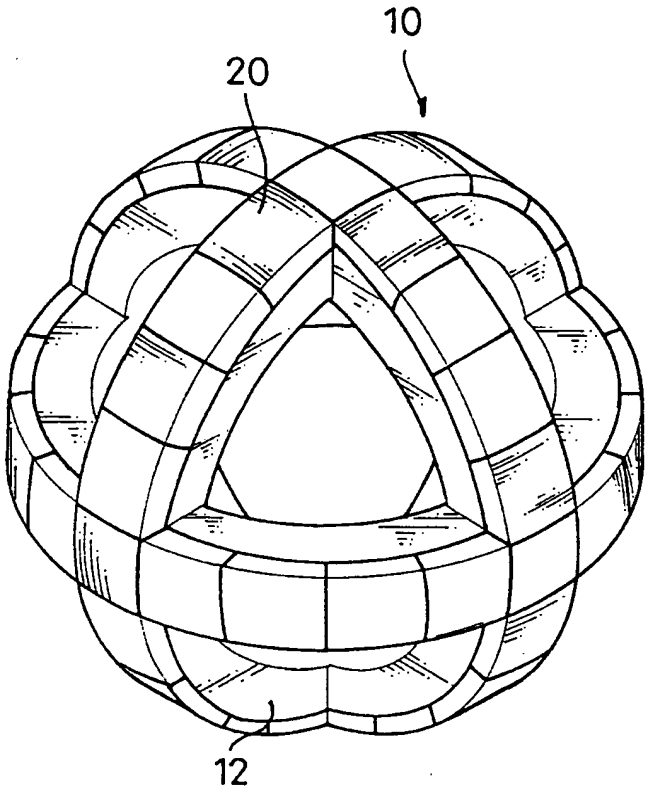

FIG.1

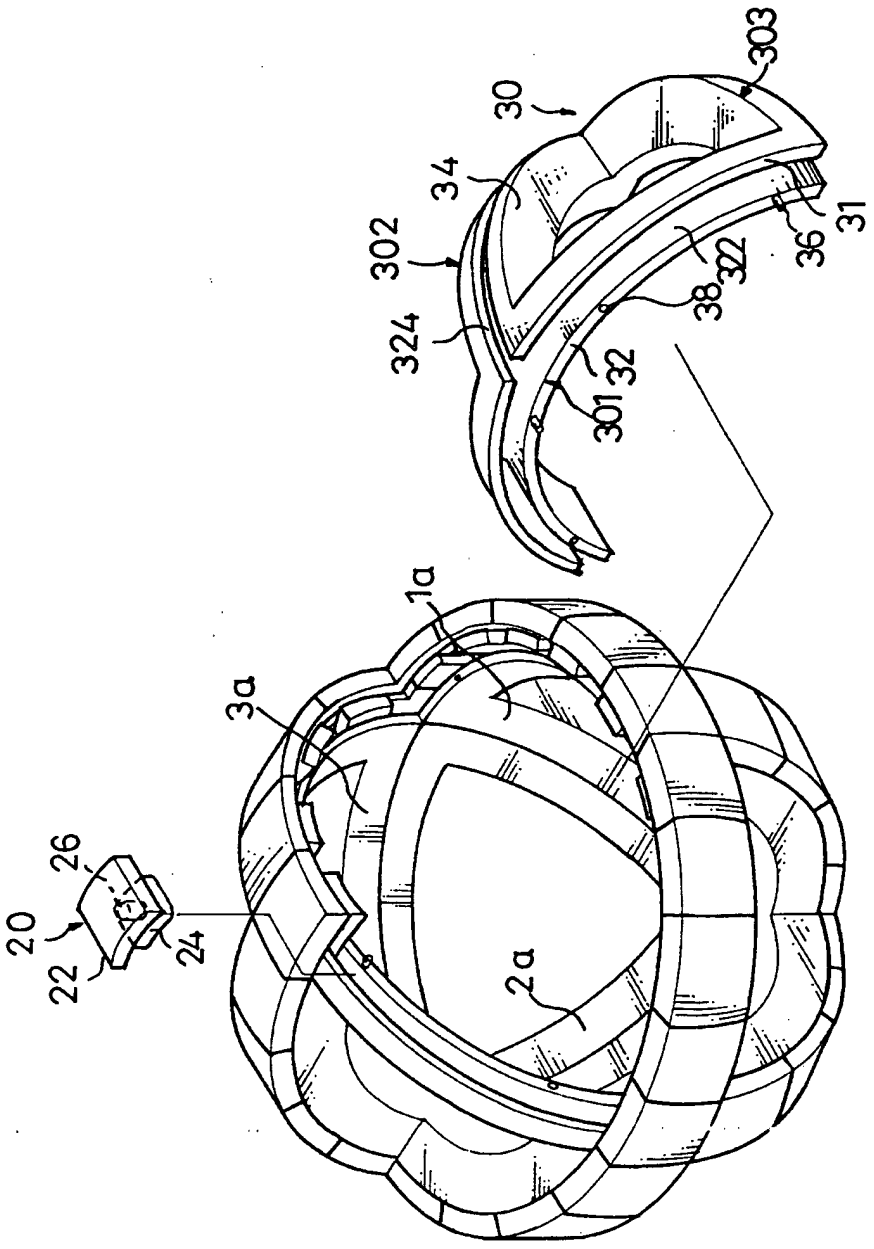

FIG. 2

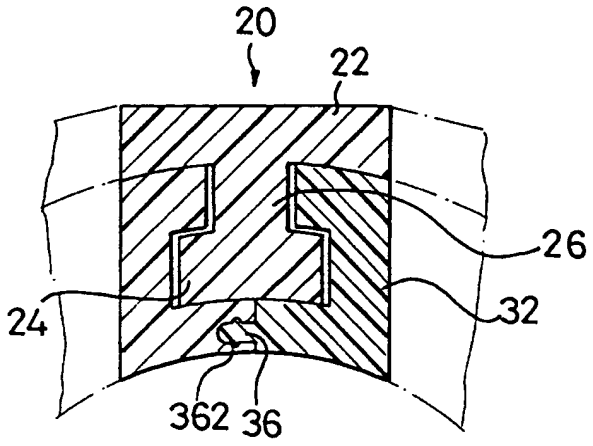

FIG.3

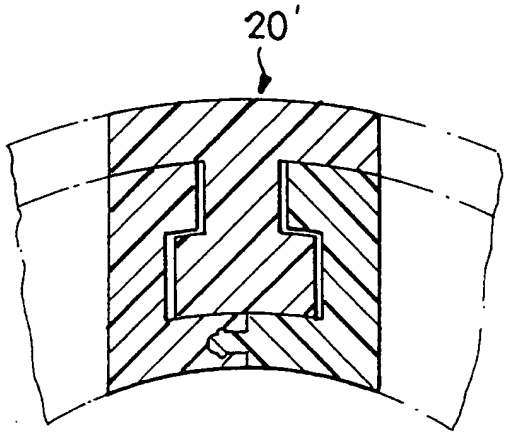

FIG.4

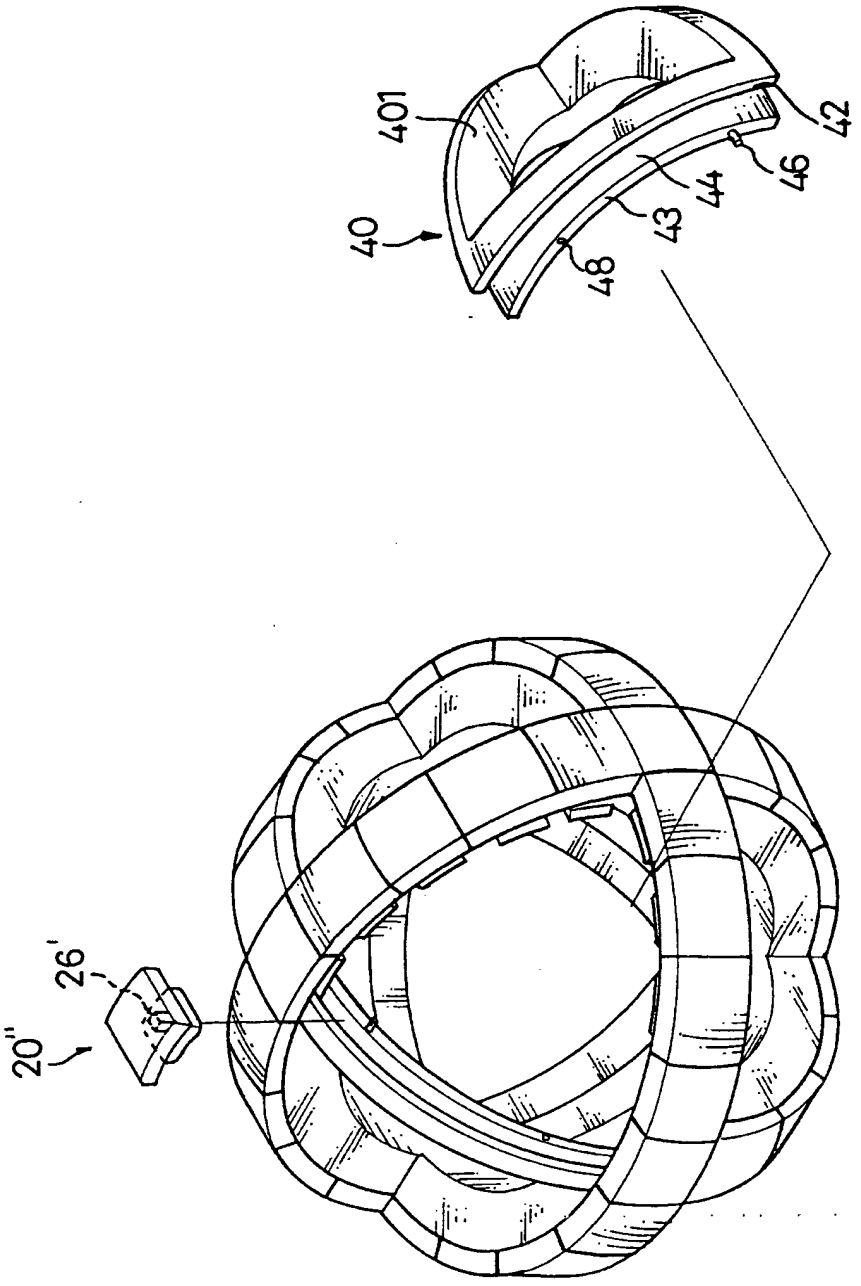

FIG. 5